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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/918,005

07/30/2001

Markus Gross

A34695 071308.0192

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09/14/2006

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EXAMINER

PHAN, TRI H

ART UNIT

PAPER NUMBER

2616

DATE MAILED: 09/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/918,005	<b>Applicant(s)</b> GROSS ET AL.	
	<b>Examiner</b> Tri H. Phan	<b>Art Unit</b> 2616	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 June 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 32-46 is/are pending in the application.
- 4a) Of the above claim(s) 17-31 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 32-35, 39-40, and 43-46 is/are rejected.
- 7) ☐ Claim(s) 36, 41 and 42 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>6/26/2006</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Amendment/Arguments***

1. This Office Action is in response to the Response/Amendment filed on June 26<sup>th</sup>, 2006. Claims 1-16 are now canceled, claims 17-31 are withdrawn. Claims 17-46 are now pending in the application. In a response to this Office Action Applicant should cancel the non-elected claims to expedite the prosecution, should the response place the instant application in a favorable condition for allowance.

### ***Claim Objections***

2. Claims 34 and 46 are objected to because of the following informalities:

Regarding claim 34, line 3, “*is*” should be deleted for clarification.

In claim 46, line 2, the term “*operable to*” is a conditional term, which is not a positive recited claimed limitation. It is suggested applicants change into the positively term.

Appropriate corrections are required.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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4. Claims 45-46 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 45-46 claim both an apparatus, e.g. a communication system/distributed drive system, and method steps of using it, e.g. perform the method according to claim 32. It is unclear what product/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced and what step(s) is involving in the method/process.

Claims 45-46 are rejected under 35 U.S.C. 101 because the claim(s) is directed to neither a "process" nor a "product", but rather embraces or overlaps two different statutory classes of invention set forth in 35 U.S.C. 101 which is drafted so as to set forth the statutory classes of invention in the alternative only.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Tan, Yoichi** (U.S.4,502,137A; hereinafter refer as '**Tan**').

- In regard to claim 32, **Tan** discloses, *a method for real-time communication between a number of network subscribers in a communication system* (for example see figure 2; col. 2, lines 41-44) using Ethernet physics (for example see col. 2, lines 4-6), *comprising the steps of transmitting messages via Ethernet devices to establish communication between a master unit and one or more slave units with one another* (for example see figure 2; col. 1, lines 4-6; wherein the master station, e.g. “*master unit*” or key station, is communicating with other personal stations, e.g. “*slave units*”, as disclosed in col. 2, lines 11-16),

*synchronizing the master unit and the one or more slave units by means of a common timebase to interchange messages* (‘block and frame timing’ from key station) *cyclically within a total cycle time* (for example see Abstract, col. 4, lines 11-17; col. 8, lines 17-19; wherein the frame is periodically repeated on a time base as disclosed in figure 1; col. 3, lines 6-9), and

*assigning each slave unit a first timeslot within said total cycle time for transmission of a telegram and a second timeslot for reception of a telegram* (for example see figure 3; where the transmission and reception blocks of stations such as R1-4 and C for transmitting and receiving packets, e.g. “*telegram*”, are the “first and second timeslots” within the total cycle time, e.g. ‘S block + R block’ in figure 3); and

*assigning each master unit a third timeslot within said total cycle time for transmission a telegram and a fourth timeslot for reception of a telegram* (for example see figure 3; where the transmission and reception blocks of station S for transmitting and receiving packets, e.g. “*telegram*”, are the “third and fourth timeslots” within the total cycle time, e.g. ‘S block + R block’ in figure 3).

Though, **Tan** does disclose the master and personal stations for using Ethernet method (for example see col. 2, lines 4-20); but does not explicitly disclose about “Fast-Ethernet” devices; however, “Fast-Ethernet” is well known in the art for faster transmission with data rate as 100 Mbps as compare with Ethernet with 10 Mbps. Therefore, it would have been obvious to the person of ordinary skill in the art at the time of the invention was made to use the Fast-Ethernet for faster transmission in the **Tan**’s Ethernet system.

7. Claims 33-35, 39-40, and 43-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Tan, Yoichi** (U.S.4,502,137A) in view of **Kölblin et al.** (U.S.6,516,364; hereinafter refer as ‘**Kölblin**’).

- In regard to claim 33, **Tan** discloses all the subject matter of the claimed invention as discussed above for performing real time transmission; wherein the personal units, e.g. “*slave units*”, are synchronized with the key station, e.g. “*master unit*”, by using the frame and block synchronization of the S packet to set/reset its frame counter to the exact point in time of their own reception with propagation delay, e.g. “*each slave unit being timed by way of a respective counter with a preassigned total cycle time*”, as disclosed in col. 4, lines 11-17; col. 7, line 50 through col. 8, line 33; but fails to explicitly disclose wherein “*the respective slave-specific synchronization information determined by the master unit*”. However, such implementation is known in the art.

For example, **Kölblin** discloses, a system and method for data transmission using time coordination (for example see col. 1, line 39 through col. 2, line 11); wherein the adaptation

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module (“*master unit*”) applies the synchronization message for each transmitter (“*slave unit*”) with start of respective cycle time and predetermined phase shift for resetting its internal timer (“*respective counter*”; for example see col. 4, lines 31-33) due to the delay time as disclosed in col. 2, line 62 through col. 3, line 6, e.g. “*the respective counter being set cyclically by reception of respective slave-specific synchronization information determined by the master unit*”.

Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention was made to implement the invention as taught by **Kölblin**, by using the synchronization message with specific predetermined phase shift into the **Tan**’s synchronization message, with the motivation being to avoid overload transmission in the time-coordinated manner as disclosed in **Kölblin**: col. 1, line 39-42.

- In regard to claim 34, **Tan** further discloses, *the respective synchronization time* (‘frame and block synchronization’; for example see col. 6, lines 1-8; col. 7, lines 50-62) *and an associated number value* (‘address and control fields’; for example see figure 1; col. 3, lines 7-12; col. 9, line 65 through col. 10, line 3) *assigned for each slave unit*.

- Regarding claim 35, **Tan** further fails to explicitly disclose wherein the respective synchronization information, the total cycle time, the timeslots are assigned to each slave during an “*initialization phase*” (for example see col. 4, lines 11-17; wherein the very first station transmits the frame and block synchronization to other stations at the initiative, e.g. “*initialization phase*”).

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- In regard to claim 39, **Tan** further discloses, *wherein current instantaneous values are stored in each slave unit at a common point of time* (for example see col. 3, lines 52-67; where the transmitting clock is calculated at the point in time as disclosed in col. 7, line 60 through col. 8, line 15).

- Regarding claim 40, **Tan** further discloses, *wherein each slave unit in each telegram sends a signal to the master unit and the master unit, in the absence of said signal, controlledly stops the corresponding slave unit* (for example see col. 9, lines 52-61).

- In regarding claim 43, the combination of **Tan** and **Kölblin** fails to explicitly disclose, *wherein separate transmission and reception lines between two network subscribers are used simultaneously, in that all slave units will transmit only in the direction towards the master unit, and receive telegrams only from the master unit from the master direction*. However, using different lines for transmitting and receiving data is well known in the art for transmission data in communication technique, such as token ring with dual ring.

Therefore, it would have been obvious to the person of ordinary skill in the art at the time of the invention was made to implement the use of different lines for transmitting and receiving data into the **Tan**'s bidirectional transmission (see col. 1, lines 21-23), with the motivation being to provide reliability and high transmitting efficiency for data transmission as with design choices.



- Regarding claims 44 and 45, the combination of **Tan** and **Kölblin** further discloses, *a method of real time communication between network subscribers to several communication systems with Ethernet physics, wherein a majority of network subscribers having a circuit part to form network nodes (for example see **Kölblin**: stations S, C, R in figure 2), serving to pass along the telegrams towards another master unit or additional slave units (R1-4), wherein the network subscribers communicating with each other directly within each communication system or via a network node according to claim 32 (for example see **Kölblin**: figure 2).*

8. Claim 46 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Tan, Yoichi** (U.S.4,502,137A) in view of **Azarya et al.** (U.S.5,978,578; hereinafter refer as '**Azarya**').

Note: The term "operable to" is a conditional term, which is not a positive recited claimed limitation; therefore, the limitations following the term "operable to" may not be considered as the claimed limitation, with the broadest interpretation.

- In regard to claim 46, **Tan** discloses all the subject matter of the claimed invention as discussed above for the method to perform real time transmission of the multipoint communication system; wherein the personal units, e.g. "*slave units*", are synchronized with the key station, e.g. "*master unit*", by using the frame and block synchronization of the S packet to synchronize and set/reset its frame counter to the exact point in time of their own reception with propagation delay; but fails to explicitly disclose specific system as in claimed invention for implementing with the method; wherein "*a distributed drive system with hierarchical network operable to perform the method according to claim 32, the system comprising a first communication system including a numeric motion control as master unit and at least one regulating unit as slave unit, each regulating unit serving as master unit of an additional*

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*communication system comprising at least one power part to trigger a motor and an associated emitter system as slave units*". However, such implementation is known in the art.

For example, **Azarya** discloses a distributed drive system ('control automation system') with hierarchical network (for example see Abstract; figure 3), the system comprising a first communication system ('plant manager 15' in figure 3) including a numeric motion control as master unit ('personal computer 14' in figure 3; wherein the personal computer, e.g. "*master unit*", executes and controls the external openbus node controllers, e.g. "*slave units*", of the factory floors) and at least one regulating unit as slave unit ('open node controller 10' in figure 3), *each regulating unit serving as master unit of an additional communication system* (for example see figure 3; col. 9, lines 59-65; wherein the openbus node controller of the factory floor, e.g. "*master unit of an additional communication system*", receives the real-time control information for monitoring and controlling the sensors, motors, I/O devices, etc., e.g. "*slave units*", on the factory floor) *comprising at least one power part to trigger* ('event triggers and actions'; for example see col. 18, line 57 through col. 19, line 26) *a motor and an associated emitter system as slave units* ('sensors and I/O devices' in figure 3).

Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention was made to implement the automation control system as taught by **Azarya**, into the **Tan**'s communication system, with the motivation being to provide an automated control system that enables the controller to access real-time information of the attached hardware regardless of the location of the requesting controller as disclosed in **Azarya**: col. 2, lines 45-60, as with system design choices.

***Response to Arguments***

9. Applicant's arguments filed on June 26<sup>th</sup>, 2006 with respect to claims 32-35, 37-40 and 43-46 have been considered but are moot in view of the new ground(s) of rejection.

***Allowable Subject Matter***

10. Claims 36 and 41-42 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tri H. Phan, whose telephone number is (571) 272-3074. The examiner can normally be reached on M-F (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi H. Pham can be reached on (571) 272-3179.

**Any response to this action should be mailed to:**

**Commissioner of Patents and Trademarks**

Washington, D.C. 20231

**or faxed to:**

**(571) 273-8300**

Hand-delivered responses should be brought to Randolph Building, 401 Dulany Street, Alexandria, VA 22314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office, whose telephone number is (571) 272-2600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Tri H. Phan  
September 8, 2006



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